**Lesson 1:** Evaporation  
**Grade Level:** 4th grade

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| **Objective:**    By the end of the lesson, students will be able to explain what evaporation is and how the heating and cooling of water affect the rate of evaporation. |
| **Standards:**  **ELA:**   * **C**CSS.ELA-LITERACY.SL.4.1.C: Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. * CCSS.ELA-LITERACY.SL.4.1.D: Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.   **NGSS:**   * **4-ESS2-1**. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation * **SEP**: Planning and carrying out investigations to answer questions or test solutions to problems in 3–5 builds on K–2 experiences and progresses to include investigations that control variables and provide * **DCI:** ESS2.A: Earth Materials and Systems * **CCC**: Patterns can be used as evidence to support an explanation. |
| **Materials/Technology:**   * Smarboard * Hot water * Styrofoam cups * Plastic clear cups * Chromebooks * Access to internet at home for class Wikki |
| **Initiation:**  **-**The class will begin by going over the pre-unit questions that the students answered on the online Wiki  **Procedure:**  **-**Students know that this unit will have hands on experiments in the class, and further explanation of concepts using technology at home  -I will show students how to organize their science notebooks and the students will glue in notes about the heating and cooling of water into their notebooks  -Students will split into their lab groups and go to their experiment set up  -The students watch and help set up the experiment: each table will have two Styrofoam cups, two plastic cups, hot water, and bottled water. I will pour the hot water into one of the Styrofoam cups and the students pour cool water into the other ; they then quickly place the plastic cups over the Styrofoam cups and observe  -I will be circulating to each group and make sure that students are recording what they see, are having productive conversations about the experiment, and drawing what they see happening  -Students will then meet back on the rug after about 15-20 minutes of observation and recording time  -On the rug, students will have a class discussion about what they observed and what it could mean  -To close, the class will meet on the rug to discuss their initial thoughts, reactions, and questions they have  At Home:  -At home, the students will use the online Wikki to explore the idea of evaporation  -They will use their observation notes to respond to the Padlet regarding the first experiment; students must respond to at least two classmates  -They will watch a video of an evaporation experiment, and explore the images on the ThingLink before reading over their notes for this lesson which are posted on the site  -Lastly, students will respond to the questions posted by commenting on a discussion board |